IRS Office of the Chief Procurement Officer

Analytics, Research, & Technology Division

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Making Federal Financial Data More Reliable with Emerging Tech

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The content of this presentation is the opinion of the writers and does not necessarily represent the position of the Internal Revenue Service.

Providing Consistent, Reliable Federal Spending Data to the Public

The Digital Accountability and Transparency Act (DATA Act) was enacted to:

- "[E]xpand the Federal Funding Accountability and Transparency Act of 2006 (31 U.S.C. 6101 note) by disclosing direct Federal agency expenditures and linking Federal contract, loan, and grant spending information to programs of Federal agencies to enable taxpayers and policy makers to track Federal spending more effectively";
- "[E]stablish Government-wide data standards for financial data and provide consistent, reliable, and searchable Governmentwide spending data that is displayed accurately for taxpayers and policy makers on USASpending.gov';
- [I]mprove the quality of data submitted to USASpending.gov by holding Federal agencies accountable for the completeness and accuracy of the data submitted.

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Data Quality Challenges and Audits

Agency Inspector Generals perform an annual validation of and verification audits of procurement data. The Treasury Inspector General for Tax Administration's (TIGTA) Fiscal Year 2020 DATA Act Audit identified IRS procurement data elements with a relatively high error rate.

Data Element Name	FY 2020	FY 2019	Change
Primary Place of Performance Address	44%	52%	- 8%
Potential Total Value of Award	29%	35%	- 6%
Primary Place of Performance Congressional District	26%	21%	5%
Action Date	25%	28%	- 3%
Legal Entity Address	23%	19%	4%
Current Total Value of Award	23%	35%	- 12%
Period of Performance Current End Date	22%	24%	- 2%
Period of Performance Potential End Date	21%	28%	- 7%
Ultimate Parent Legal Entity Name	21%	52%	- 31%
Ultimate Parent Unique Identifier	21%	23%	- 2%

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Locating Unstructured Information in Contract Documents

Some information is not found in consistent locations across contract documents.

Where is the Place of Performance in this contract document?	Key information on modifications is captured in a free form description box on the Standard Form 30.
	14. DESCRIPTION OF AMENDMENT/MODIFICATION

Artificial intelligence is used to locate these data elements within documents.

Emerging Technology Solutions

Given the scale of federal financial transactions – maintaining reliable, high quality financial data can be challenging.

- **Use of emerging technologies such as robotic process automation (RPA) and natural language processing can reduce manual work for agency employees and improve the consistency of financial data**
- **RPA bots emulate humans in performing computer tasks (e.g. bot clicks with mouse and types information in systems). Further intelligent automation adds complex, artificial intelligence reasoning capabilities (e.g. locate specific information in varying locations within contract documents).**
- **These technologies are key to success on financial audits and maintaining public confidence in the reliability of contract and non-contract financial information.**

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Bot Solution

The DATA Act Bot extracts information from contract documents and then compares with Federal Procurement Data System reporting.

Information Identified	Contract Document	Data from FPDS-NG	Match	Ext. Source	Ext. Source Info
Contract #	205AE918P00215	205AE918P00215			
IDV Number					
Agency ID	2050	2050			
Office ID	205AE9	205AE9			
Obligated Amount	$-327.0	$-327.00			
Date Signed	2020-04-29	2020-04-29			
Mod #	P00001	P00001			
Contractor Name	TOBY FELDMAN, INC.	FELDMAN, TOBY INC			
NAICS Code		561492			
Contractor Address	3 COLUMBUS CIRCLE	450 FASHION AVENUE SUITE 502			
Country	US	USA			
Zip Code	10019	101230592			10019-8760

clarifi — Upload Retrieve Generate SF-30 Save Draft in FPDS | FPDS-NG user: Mmurugesan

Upload contract document: Upload ☑ Get Place of performance Document: **18 SF30.pdf**

Results

The DATA Act bot has brought demonstratable improvement to agency performance on DATA Act audits.

- The bot automates the tedious work of verifying the consistency of contract s, dollar amounts, addresses, and other information.
- The Treasury Inspector General for Tax Administration's FY 2020 DATA Act audit states the "IRS received a score of 97.7 based on our sample and therefore has an overall quality rating of "Excellent.""

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Use of Open Federal Spending Data

Examples search benefiting from the availability of high-quality spending data:

Professional Field	Organization	Study
Global Development	Columbia University	US Spending in Haiti
Public Affairs	University of Missouri	Federal contracting trends in Missouri
Business Innovation	Hoover Institution	Supporting Advanced Manufacturing in Alabama
Disaster Medicine and Public Health Preparedness	Cambridge University Press	US Governmental Spending for Disaster-Related Research
Sustainability	Environmental Research: Infrastructure and Sustainability	United States federal contracting and pollution prevention
Nonprofit Sector	Syracuse University	What Big Data Can Tell Us About Government Awards to the Nonprofit Sector
Education	Heritage Foundation	Pandemic Education Spending
Public Health	BMJ Medicine	Use of private management consultants in public health	The BMJ
Political Science	Cambridge University Press	Implementing presidential particularism: bureaucracy and the distribution of federal grants	Political Science Research and Methods	Cambridge Core

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